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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/543,604	04/05/2000	Dieter Mueller	81208-246298	6492

7590

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STEVEN W SMYRSKI, ESQ
SMYRSKI & LIVESAY, LLP
3310 AIRPORT AVENUE SW
SANTA MONICA, CA 90405-6118

EXAMINER

LEE, HWA S

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/543,604

Applicant(s)

MUELLER ET AL.

Examiner

Andrew H. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 24 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claim 1-23, drawn to a system for scanning both sides of a two sided specimen, classified in class 356, subclass 512.
 - II. Claims 24 and 25, drawn to a dual sided object, classified in class 359, subclass 840.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because a dual sided specimen with no patterns can be used. The subcombination has separate utility such as calibrating surface for a normal incidence interferometer. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

2. During a telephone conversation with Steven Smyrski on December 11, 2002 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-23. Affirmation of this election must be made by applicant in replying to this Office action.

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Claims 24 and 25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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12.14.02
1. Claims 1-3, 5-12, and 16-19 are rejected under 35 U.S.C. 102(e) as being ~~clearly~~ anticipated by de Groot (6,249,351).

deGroot shows a grazing incidence interferometer, for example Figure 7, comprising:

- a light energy generating device (701);
- a collimator (703, 706);
- a diffraction grating (705);
- at least one reflective surface (730, 731);
- a second diffraction grating (770);
- at least one receiving collimator (771, 773);
- at least one camera (775).

As for claims 2, and 7, please see Figure 7, where the reflective surface and specimen receive nonzero order light.

As for claims 3, 10, 12, and 22, please see column 5, lines 6+.

As for claims 5, 16-18, and 23, please see camera (175 or 475) and column 9, lines 53+.

As for claim 6, the receiving collimator comprises at least one lens.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 4, 13-15, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over de Groot as applied to claims 1-3, 5-12, and 16-19 above, and further in view of Official Notice that semitransparent elements for use as a mirror, and in view of Ai et al. (5,471,303).

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5. de Groot fails to expressly show that the reference element is semitransparent. de Groot however states that the reference element must function as a mirror for the grazing incident light. Official Notice is taken that semitransparent elements for use as a mirror to grazing incident light (are/is) old and well known in the art. See *In Re Malcolm* 1942 C.D.589: 543 O.G.440. At the time of the invention, one of ordinary skill in the art would have used a semitransparent element to function as a mirror in order reflect the grazing incident light.

6. de Groot fails to show an interferometric normal incidence inspection device. Ai et al shows a combination of two interferometers for surface profile measurement in a single apparatus comprising a light emitting device (34 or 36), a beamsplitter (24), and a collimator (lens in 14). Ai et al suggest the use of a second normal incident interferometer to improve the accuracy of height measurements. At the time of the invention, one of ordinary skill in the art would have used a second interferometer in order to obtain improve the measurements of the first interferometer, whether the second interferometer provides a redundant measurement or the second interferometer has better a range of height measurements or improved accuracy.

7. Therefore, one of ordinary skill in the art would have deGroot's apparatus having a semitransparent reflective surface and a normal incidence inspection device. However, the prior art does not show the semitransparent reflective surface being used by the grazing incidence interferometer and the normal incidence interferometer as a reference surface.

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8. As for claims 13-15, it would have been obvious to calibrate the interferometer both just before and after a specimen is measured in order to obtain errors caused by imperfect optical components of the interferometer or temperature fluctuations.

Papers related to this application may be submitted to Technology Center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the PTO Fax Center located in CP4-4C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Center numbers are 703-872-9318 for regular communications and 703-872-9319 for After Final communications

If the Applicant wishes to send a Fax dealing with either a Proposed Amendment or for discussion for a phone interview then the fax should:

a) Contain either the statement "DRAFT" or "PROPOSED AMENDMENT" on the Fax Cover Sheet; and

b) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa Lee whose telephone number is (703) 305-0538. The examiner can normally be reached on M-Th. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 703-308-4881.



Andrew Lee
Patent Examiner
Art Unit 2877
December 12, 2002/ahl



Frank Font
Supervisory Patent Examiner
Art Unit 2877